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***Abstract*—The idea is to incorporate the concept of money into Particle Swarm Optimization (PSO) algorithm to create a new PSO algorithm titled "Money Particle Swarm Optimization (MyPSO)" algorithm.**

Keywords—Particle Swarm Optimization, PSO, Money, Money Particle Swarm Optimization, MyPSO, Artificial Intelligence, AI

I. INTRODUCTION

Articles [1] to [19] prove that Particle Swarm Optimization (PSO) is popular and widely used in literature for solving various problems. However, the concept of money is not incorporated into PSO algorithm to create a new PSO algorithm. This article is based on this research gap. PSO is explained in second section. A new algorithm titled "Money Particle Swarm Optimization (MyPSO)" algorithm is described in third section. Conclusions are made in fourth section. References are shown at the end of the article

II. PARTICLE SWARM OPTIMIZATION

In PSO, at first all particles are initialized. Current Generation is initialized to 0. The local best of each particle is identified. The global best of all particles is identified. Velocity and Position are updated as shown in Step 5 to Step 8. Current Generation is incremented by 1. This loop is continued until termination condition is reached in step 10.

Procedure: Particle Swarm Optimization (PSO)
1) All particles are initialized
2) Current Generation is set to 0
3) Identify local best of each particle
4) Identify global best of all particles
5) For each particle and for each dimension do
6) vi,d = w*vi,d +
C1*Random(0,1)*(pbesti,d – xi,d)
+ C2*Random(0,1)*(gbestd – xi,d)
7) xi,d = xi,d + vi,d
8) End For
9) Current Generation is incremented by 1
10) loop until termination condition is reached

III. MONEY PARTICLE SWARM OPTIMIZATION

In Money Particle Swarm Optimization (MyPSO), local money best (money_pbesti), global money best (money_gbest) are maintained in addition to local best of each particle and global best of all particles. In MyPSO, velocity is updated where each particle (xi) moves towards local money best of each particle and global money best of all particles in addition to local best of each particle and global best of all particles.

Procedure: Money Particle Swarm Optimization (MyPSO)
1) All particles are initialized
2) Current Generation is set to 0
3) Identify local best of each particle
4) Identify global best of all particles
5) Identify local money best of each particle
6) Identify global money best of all particles
7) For each particle and for each dimension do
8) vi,d = w*vi,d +
C1*Random(0,1)*(pbesti,d – xi,d)
+ C2*Random(0,1)*(gbestd – xi,d)
C3*Random(0,1)*(money_pbesti,d – xi,d)
+ C4*Random(0,1)*(money_gbestd – xi,d)
9) xi,d = xi,d + vi,d
10) End For
11) Current Generation is incremented by 1
12) loop until termination condition is reached

IV. CONCLUSIONS

A new algorithm "Money Particle Swarm Optimization (MyPSO)" is introduced in this article. Each particle in this algorithm is associated with a money variable. The movement of particles in search space of MyPSO is guided by the money values of all particles in addition to the fitness values of all particles. One may not conclude that Money PSO algorithms like MyPSO algorithm designed in this article will perform better than plain PSO algorithms which don't involve the concept of money incorporated into their design.

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